

Abstract

A micro plasma sensor system having a glow discharge gap.

A fluid to be sensed may be brought into the vicinity of the discharge at the gap. Emission light from the discharge may be coupled to an optical spectrum analyzer for determining properties of the fluid. The coupling may include a window and particulate-matter-sensing electrodes proximate to the discharge gap. Window cleanliness and electrode electrical isolation may be maintained by the discharge. The optical analyzer may have individual bandpass filters for two or more optical channels to optical detectors, a Fabry-Perot filter in front of a set of optical detectors, or a grating or prism which disperses emission light at various angles according to wavelength to an array of light detectors. The optical detectors may output electrical signals to be processed.